

DOI UAS Fleet



Photo Credit: 3DR

3DR Solo Quadcopter

Specifications

Height: 10 in. (25 cm)

Cruise speed: 5.7 mph (2.5 m/s)

Motor-to-motor dimension: 18 in. (26 cm)

Maximum speed: 55 mph (25.5 m/s)

Propulsion: 880 KV motors, two clockwise rotating motors and two counterclockwise rotating motors

Maximum climb rate: 11 mph (5.0 m/s)

Maximum descent rate: 5.5 mph (2.5 m/s)

Propeller: 10 in. x 4.5 in. (25 cm x 11.4 cm)

Headwind limitation: 25 mph (11 m/s)

Weight with battery: 3.3 lbs. (1.5 kg)

Crosswind limitation: 25 mph (11 m/s)

Estimated flight time: 25 minutes

Operating temperature: 32° F - 113° F (0° C - 45° C)

Maximum altitude: 328 ft. (100 m)

Operating relative humidity: 0-85% RH

Range: .5 miles** (.8 km)

Payload capacity: 1.1 lbs. (500 g)



Photo Credit: Pulse Aerospace

Pulse Vapor 55TM Helicopter

Capabilities

The Pulse Aerospace Vapor 55TM is a tactical helicopter, unmanned aircraft system (UAS) capable of carrying larger payloads up to 24 lbs. Payload options include survey-grade airborne lidar and next generation high definition EO/IR brushless gimbals. The Vapor 55TM includes an extensive safety feature set, a precision full authority automatic flight control system, and easy to operate touchscreen ground control station. The Vapor 55TM carries a 12 lb., front mounted sensor for up to 60 minutes on a single charge. Larger payloads can also be carried. The Vapor 55TM utilizes automatic rotor speed

Specifications

Main Rotor: Diameter 90 in
Dimensions: 77 x 26 x 23
Maximum Takeoff: Weight 55 lbs
Empty Weight: 19 lbs
Payload Weight: 10 lbs (33 lbs useful load)
Data Link: 2.4 GHz & 900 MHz, High Bandwidth, Encrypted, Digital
Endurance (Hover): 45 Minutes
Endurance (Cruise): 60 Minutes
Operational Radius: 5 Miles
Cruise Speed: 25 mph Ceiling: 15,000 ft
Take Off Type: Automatic Vertical Take Off
Landing Type: Automatic Vertical Landing

calibration for altitudes from sea level to over 10,000ft AMSL.

[For More Information](#)

Drive: Electric power plant with 2 stage transmission, torque tube tail drive, lithium battery

Avionics: Fully automatic flight control system, 3 or 5 axis redundant IMU options, Honeywell Digital Magnetometer, Survey Grade GPS + Glonass positioning

Aerodynamics: 3 blade semi-rigid fly-bar-less main rotor, high efficiency carbon fiber blades

Payload Compatibility: HD EO/MWIR brushless camera ball, Riegl VUX-1 LiDAR with survey grade GNSS/IMU, High resolution aerial photography imagers

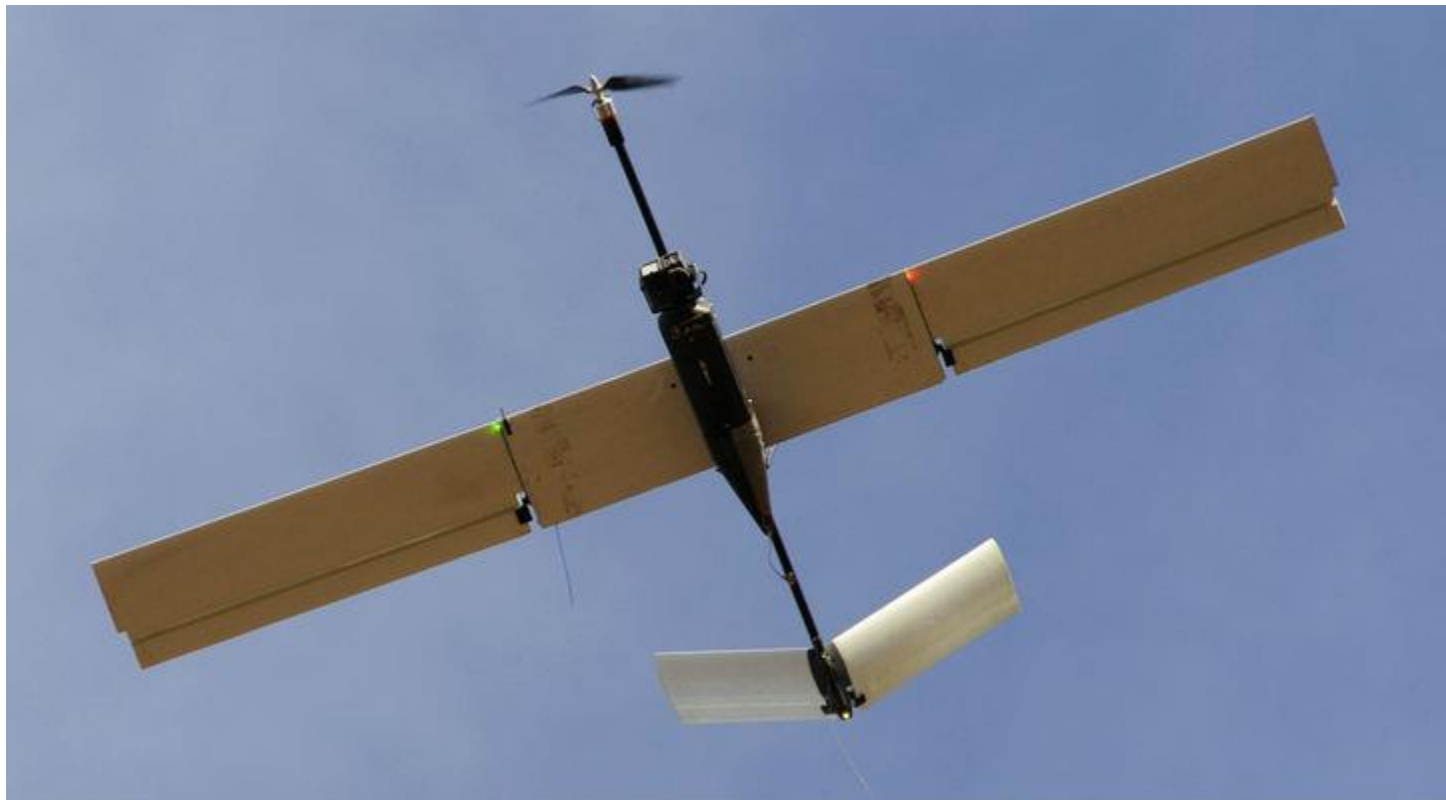


Photo Credit: Falcon Unmanned

Fixed Wing Falcon

Capabilities

Falcon is a tactical, fixed wing, unmanned aerial vehicle (UAV). The Falcon is designed around a modular payload and airframe design concept allowing for multi-mission capabilities, easy setup, and simple logistics for long term support. Falcon is single person portable system which may be operated by a single individual and is transported in a custom soft bag with backpack straps, shoulder sling, and hand holds for easy transport. Falcon and Falcon Hover utilize interoperable components including shared payloads, shared batteries, and a shared ground control station.

Falcon is bungee launched using a single bungee cord attached to any object/structure that can withstand the pull force of 15lbs (8kg). Example launch attach points include trailer hitches, roots, branches, tree trunks, brush, fence posts, a stake in the ground, and even a person holding the end of the bungee. The bungee launch provides most of the energy for launch thereby reducing the physical strength requirements to launch the aircraft. The bungee launch also directs the aircraft along a desired launch path and gains altitude rapidly allowing for operations in tightly constrained locations

Specifications

Communications: Secure Digital Datalink (Up to 256 bit AES encryption)

Autopilot: Pixhawk Autopilot by 3D Robotics

Sensor Suite: Ublox GPS, Barometric Pressure Sensor, Dynamic Pressure Sensor, Redundant 3 Axis Accelerometers, Redundant 3 Axis Rate Gyros

Control Modes: GPS Waypoint Navigation and Multiple Semi-Autonomous Flight Modes

Launch Method: Bungee Hand Launch / Bungee Rail Launch

Recovery Method: Parachute or Belly Landing

Endurance: 60+ min (operations/mission dependent)

Assembly: Less than 2 min

Ready to Launch: Less than 10 minutes

Take Off Weight: Up to 12 lb (Payload Dependent)

Payload Weight: Up to 2.5lbs

Flight Endurance Range: 30-60 miles

Communications Range: 6+ miles (terrain / antenna dependent)

Dash Speed: 45 knots

Cruise Speed: 27 knots

Operating Altitude: Up to 2000 ft AGL

Service Ceiling: Tested to 12,000 ft, estimated maximum altitude of 15,000 ft MSL

Assembled Dimensions: 96" width (span) x

including forested areas, narrow paths, roadways, parks, parking lots, etc.

17" height x 54" length

Packed Dimensions: 14" width x 7" height x 54" length

Falcon uses a parachute recovery as the primary landing method however a secondary landing method is a conventional belly landing. The parachute recovery allows for recovery in constrained environments as well as areas with rugged ground cover. During a parachute recovery the aircraft lands motor first.

[For More Information](#)



Photo Credit: Falcon

Hover

Falcon Hover

Capabilities

Falcon Hover (or Hover) is a tactical, quadcopter, unmanned aerial vehicle (UAV) with a top mounted fuselage capable of front mounted and bottom mounted payload options.

Specifications

Communications: Secure Digital Datalink (Up to 256 bit AES encryption)

Autopilot: Pixhawk Autopilot by 3D Robotics

Sensor Suite: Ublox GPS, Barometric Pressure

Falcon Hover is designed around a modular payload and airframe design concept allowing for multi-mission capabilities, easy setup, and simple logistics for long term support. Hover is a single person portable system which may be operated by a single individual and is stored in a custom soft bag with hand holds for easy transport. Falcon and Falcon Hover utilize interoperable components including shared payloads, shared batteries, and a shared ground control station.

Falcon Hover is a Vertical Take Off and Landing (VTOL) aircraft. The VTOL launch and recovery of the aircraft allow for operations in tightly constrained locations including forested area, narrow paths, roadways, parks, parking lots, etc. Takeoffs and landings can be conducted in areas smaller than 8ft x 8ft.

[For More Information](#)

Sensor, Dynamic Pressure Sensor, Redundant 3 Axis Accelerometers, Redundant 3 Axis Rate Gyros

Control Modes: GPS Waypoint Navigation and Multiple Semi-Autonomous Flight Modes

Launch Method: Vertical Takeoff

Recovery Method: Vertical Landing

Endurance: 20-25+ min @ 5,800' MSL (operations/mission dependent)

Assembly: Less than 2 minutes

Ready to Launch: Less than 5 min

Take Off Weight: Up to 7.5 lb (Payload Dependent)

Payload Weight: Up to 2.5 lbs Flight

Endurance Range: 2+ Miles

Communications Range: 6+ Miles (terrain / antenna dependent)

Speed: 0 to 15 knots

Operating Altitude: Up to 1000 ft AGL

Service Ceiling: Tested to 10,000 ft, estimated maximum altitude of 15,000 ft MSL

Assembled Dimensions: 48" maximum tip to tip / 6" tall (without modular legs)

Packed Dimensions: 9" wide x 7" height x 24" length